

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-5. (canceled)

6. (withdrawn) Method for manufacturing a bulk acoustic wave resonator comprising the steps of

- providing a holder in the form of a silicon chip or dice,
- disposing a top electrode on the silicon dice,
- disposing a piezoelectric layer,
- disposing a bottom electrode,
- disposing a Bragg reflector,
- disposing a front side absorbing layer,
- disposing a substrate, and
- removing the holder.

7. (previously presented) A bulk acoustic wave (BAW) resonator comprising:
a top electrode;
a piezoelectric layer disposed adjacent to the top electrode;
a bottom electrode disposed adjacent to the piezoelectric layer, wherein the bottom electrode is disposed opposite the top electrode relative to the piezoelectric layer;
and

- a substrate disposed opposite the piezoelectric layer relative to the bottom electrode, wherein the substrate comprises an uneven surface to suppress a spurious mode.

8. (previously presented) The BAW resonator of claim 7, wherein the uneven surface of the substrate comprises a roughened surface to scatter the spurious mode.
9. (previously presented) The BAW resonator of claim 8, wherein the roughened surface of the substrate comprises an etched surface of glass.
10. (previously presented) The BAW resonator of claim 8, wherein the roughened surface of the substrate comprises a blasted layer of glass.
11. (previously presented) The BAW resonator of claim 7, wherein the uneven surface of the substrate comprises an absorbing layer disposed on the substrate to absorb the spurious mode.
12. (previously presented) The BAW resonator of claim 11, wherein the absorbing layer is disposed on a front side of the substrate, between the substrate and the bottom electrode.
13. (previously presented) The BAW resonator of claim 11, wherein the absorbing layer is disposed on a rear side of the substrate, opposite the bottom electrode relative to the substrate.
14. (previously presented) The BAW resonator of claim 11, wherein the absorbing layer comprises at least one acoustic absorbing material of a plurality of acoustic absorbing materials, wherein the plurality of acoustic absorbing materials comprises epoxy glue, an elasticoviscous material, rubber, silicon rubber, a plastic material, a porous media, and a porous thin film.
15. (previously presented) The BAW resonator of claim 7, further comprising a Bragg reflector disposed between the substrate and the bottom electrode.

16. (previously presented) The BAW resonator of claim 7, wherein:
the top electrode comprises a first metal material;
the piezoelectric layer comprises at least one of a plurality of piezoelectric material; and
the bottom electrode comprises a second metal material.
17. (previously presented) The BAW resonator of claim 16, wherein the first metal material of the top electrode comprises aluminum (Al).
18. (previously presented) The BAW resonator of claim 16, wherein the plurality of piezoelectric materials comprises aluminum nitride (AlN), zinc oxide (ZnO), and lead zirconate titanate (PZT)
19. (previously presented) The BAW resonator of claim 16, wherein the second metal material of the bottom of electrode comprises molybdenum (Mo), platinum (Pt), or tungsten (W).
20. (previously presented) A bulk acoustic wave (BAW) filter comprising:
a first BAW resonator to suppress a pass-band ripple of a spurious mode; and
a second BAW resonator connected to the first BAW resonator, the second BAW resonator to suppress the pass-band ripple of a spurious mode;
wherein each of the first and second BAW resonators comprises a substrate with an uneven surface to suppress a spurious mode.
21. (previously presented) The BAW filter of claim 20, wherein the first and second BAW resonators are connected in a ladder configuration.
22. (previously presented) The BAW filter of claim 20, wherein the first and second BAW resonators are connected in a lattice configuration.

23. (previously presented) The BAW filter of claim 20, wherein each of the first and second BAW resonators comprises:

- a top electrode;
- a piezoelectric layer disposed adjacent to the top electrode; and
- a bottom electrode disposed adjacent to the piezoelectric layer, wherein the bottom electrode is disposed opposite the top electrode relative to the piezoelectric layer; wherein the substrate is disposed opposite the piezoelectric layer relative to the bottom electrode.

24. (previously presented) The BAW filter of claim 20, wherein the uneven surface of the substrate comprises a roughened surface to scatter the spurious mode.

25. (previously presented) The BAW filter of claim 20, wherein the uneven surface of the substrate comprises an absorbing layer disposed on the substrate to absorb the spurious mode.